

ABSTRACT OF THE DISCLOSURE

The invention concerns the production of a template of sequences of chemical or biological molecules, and more particularly oligonucleotides by *in situ* synthesis on a substrate including microcuvettes.

5 This substrate includes microcuvettes 3 which for example, may be functionalized by reactive groups 5 protected by protective groups 7. To couple the first molecule of the desired sequences on the selected microcuvettes, the other microcuvettes are covered with
10 a protection polymer 9, and a chemical reaction is then carried out on the unprotected microcuvettes, for example by removing the protective groups 7 and by coupling the reactive groups 5 with the first molecule of the sequence, and then these operations are
15 repeated with other molecules on other microcuvettes, after having removed the protection polymer and again deposited the protection polymer on microcuvettes, which must not include the following molecule.

20 Fig. 1a.